

Remission frequency versus remission quality in transplant-eligible older patients. Comment on: "Treatment of therapy-related acute myeloid leukemia and acute myeloid leukemia with myelodysplasia-related changes: a comparative analysis of higher-dose intensive 7+3 induction chemotherapy versus liposomal cytarabine and daunorubicin"

by Naif I. AlJohani

Received: July 1, 2026.

Accepted: July 3, 2026.

Citation: Naif I. AlJohani. Remission frequency versus remission quality in transplant-eligible older patients. Comment on: "Treatment of therapy-related acute myeloid leukemia and acute myeloid leukemia with myelodysplasia-related changes: a comparative analysis of higher-dose intensive 7+3 induction chemotherapy versus liposomal cytarabine and daunorubicin".

Haematologica. 2026 July 16. doi: 10.3324/haematol.2026.301453 [Epub ahead of print]

Publisher's Disclaimer.

E-publishing ahead of print is increasingly important for the rapid dissemination of science.

Haematologica is, therefore, E-publishing PDF files of an early version of manuscripts that have completed a regular peer review and have been accepted for publication.

E-publishing of this PDF file has been approved by the authors.

After having E-published Ahead of Print, manuscripts will then undergo technical and English editing, typesetting, proof correction and be presented for the authors' final approval, the final version of the manuscript will then appear in a regular issue of the journal.

All legal disclaimers that apply to the journal also pertain to this production process.

Remission frequency *versus* remission quality in transplant-eligible older patients.

Comment on: “Treatment of therapy-related acute myeloid leukemia and acute myeloid leukemia with myelodysplasia-related changes: a comparative analysis of higher-dose intensive 7+3 induction chemotherapy *versus* liposomal cytarabine and daunorubicin”

Naif I. AlJohani

Adult Hematology and Hematopoietic Stem Cell Transplantation Section, King Faisal Specialist Hospital and Research Centre, Jeddah, Saudi Arabia

ORCID: 0000-0003-4426-9434

Correspondence: naljohani@kfshrc.edu.sa

Disclosures

The author declares no competing financial interests.

Funding

This work received no funding.

Acknowledgment of AI use

Nothing to disclose.

We read with interest the analysis by Kotsos and colleagues comparing higher-intensity double-induction 7+3, which incorporates a second cycle of intermediate-dose cytarabine as delivered in the HOVON-SAKK-Nordic trials, with CPX-351 in older patients with therapy-related AML (t-AML) or AML with myelodysplasia-related changes.¹ This is a thoughtful contribution to a genuinely open question. Using reconstructed survival data, the authors report a higher complete remission or complete remission with incomplete recovery (CR/CRi) rate with double-induction 7+3 (67.8% versus 47.7%) yet similar overall survival (OS) (median 10.1 versus 8.9 months; hazard ratio 0.99, $p=0.95$), with comparable early mortality and transplant rates. Given the relatively low CR/CRi rate in the control arm of the pivotal trial,² this is a useful and carefully constructed comparison. We write to highlight one of the study's own results, the post-transplant survival advantage observed with CPX-351, which we found difficult to reconcile with an interpretation of comparable efficacy, and to suggest that a difference in measurable residual disease at transplant, not captured in either cohort, may be a relevant explanation.

Among patients who achieved CR/CRi and proceeded to allogeneic hematopoietic cell transplantation (allo-HCT) at comparable rates (54.1% versus 56.2%, $p=0.88$), post-transplant OS favored CPX-351 (median not reached versus 14.4 months, $p=0.007$). As the authors themselves note, the objective of intensive induction is to achieve a deep remission that allows the patient to proceed to transplantation. Viewed through that lens, post-transplant outcomes seem particularly relevant to interpreting an apparent equivalence between induction strategies. In the subgroup most likely to achieve durable disease control, the direction of effect differs from the study's broader interpretation, a tension we believe merits fuller discussion.

This pattern is itself informative. A 20-point CR/CRi advantage that does not translate into longer OS, and that appears to reverse after transplant, raises the possibility that the additional

remissions achieved with double-induction differ in quality from those achieved with CPX-351. This interpretation is consistent with the broader CPX-351 experience. Post-hoc analyses of the pivotal trial found longer post-transplant survival with CPX-351 across European LeukemiaNet risk subgroups,³ and the dedicated transplant analysis attributed the post-HCT advantage to lower cumulative incidence of relapse and lower nonrelapse mortality.⁴ The authors also note that unavailable salvage-therapy data may contribute to the absence of an overall survival difference; that consideration, however, applies to the whole-cohort comparison and would not obviously account for the reversal observed among patients who had already achieved remission and proceeded to transplantation. Taken together, these data suggest that for the transplant-bound patient, remission depth may be as important as remission frequency.

One biologically plausible explanation is a difference in measurable residual disease (MRD) burden at the time of transplant, although neither cohort reported MRD data. A morphologic CR/CRi is not equivalent to an MRD-negative remission for transplant purposes: pretransplant MRD positivity is among the strongest predictors of relapse and inferior survival after allo-HCT.^{5,6} Direct evidence supports this in the relevant population: in a multicenter cohort of older patients with t-AML or AML-MRC treated with CPX-351, MRD status, rather than morphologic response, predicted overall survival (20.4 versus 12.9 months for MRD below versus above 10^{-3}) and tracked with post-transplant outcome.⁷ A higher morphologic remission rate may therefore include a larger proportion of MRD-positive remissions that fare less well after transplantation. In the absence of MRD data, an equivalence interpretation may not fully distinguish “as many remissions” from “as many transplant-enabling remissions,” and these are not interchangeable in a population for whom transplant remains the principal curative option.

We recognize that this transplant comparison is a non-randomized subgroup nested within a cross-trial analysis, and that the higher proportion of adverse-risk cytogenetics in the 7+3 cohort (67.6% versus 50.3%) is a candidate explanation for the post-transplant difference. We would note, however, that the 7+3 cohort achieved higher remission rates despite this less favorable cytogenetic profile, so adverse-risk distribution alone may not fully account for its inferior post-transplant survival, which seems at least equally consistent with a difference in remission quality. The cleanest way to resolve the question is prospective: the randomized trial now underway (NCT03897127) would ideally incorporate MRD, reporting post-HCT outcomes by MRD status as well as by induction arm, which would help establish whether obligatory double-induction truly matches CPX-351 in patients who can be cured. Until such data are available, we would interpret the finding of broadly comparable outcomes with some caution for transplant-eligible patients.

We commend the authors for a rigorous and clinically relevant analysis, and we hope these reflections are useful in sharpening a question that the field now needs to answer.

References

1. Kotsos D, Gradowska P, Hermans SJF, et al. Treatment of therapy-related acute myeloid leukemia and acute myeloid leukemia with myelodysplasia-related changes: a comparative analysis of higher-dose intensive 7+3 induction chemotherapy versus liposomal cytarabine and daunorubicin. *Haematologica*. 2026 Mar 26. doi:10.3324/haematol.2025.300065. [Epub ahead of print].
2. Lancet JE, Uy GL, Cortes JE, et al. CPX-351 (cytarabine and daunorubicin) liposome for injection versus conventional cytarabine plus daunorubicin in older patients with newly diagnosed secondary acute myeloid leukemia. *J Clin Oncol*. 2018;36(26):2684-2692.
3. Cortes JE, Lin TL, Asubonteng K, Faderl S, Lancet JE, Prebet T. Efficacy and safety of CPX-351 versus 7+3 chemotherapy by European LeukemiaNet 2017 risk subgroups in older adults with newly diagnosed, high-risk/secondary AML: post hoc analysis of a randomized, phase 3 trial. *J Hematol Oncol*. 2022;15(1):155.
4. Uy GL, Newell LF, Lin TL, et al. Transplant outcomes after CPX-351 vs 7+3 in older adults with newly diagnosed high-risk and/or secondary AML. *Blood Adv*. 2022;6(17):4989-4993.
5. Hourigan CS, Dillon LW, Gui G, et al. Impact of conditioning intensity of allogeneic transplantation for acute myeloid leukemia with genomic evidence of residual disease. *J Clin Oncol*. 2020;38(12):1273-1283.
6. Heuser M, Freeman SD, Ossenkoppele GJ, et al. 2021 update on MRD in acute myeloid leukemia: a consensus document from the European LeukemiaNet MRD Working Party. *Blood*. 2021;138(26):2753-2767.
7. Cluzeau T, Guolo F, Chiche E, et al. Long-term real-world evidence of CPX-351 of high-risk patients with AML identified high rate of negative MRD and prolonged OS. *Blood Adv*. 2025;9(4):752-758.